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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,432	09/28/2006	Akihiro Toshima	20708/0205525-US0	8748
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EXAMINER DIAZ, THOMAS C				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,432

Applicant(s)

TOSHIMA ET AL.

Examiner

THOMAS DIAZ

Art Unit

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 5-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Claims

This office action is in response to the reply filed on 04/28/2009. The examiner appreciates and acknowledges applicant's response. Claim 4 has been canceled. Claims 7-10 have been added. Claims 1-3, 5-10 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

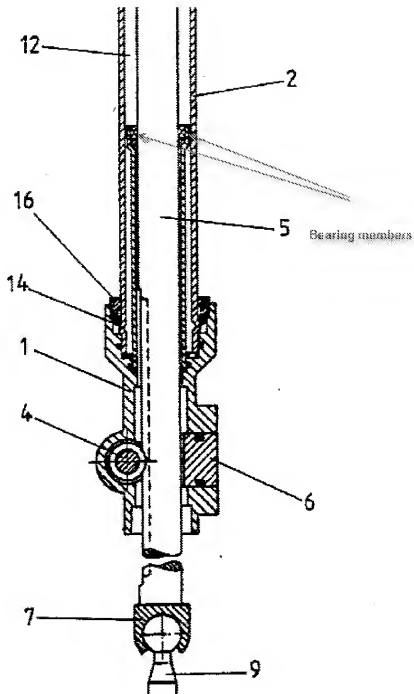
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 7, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Walter (USP 4307622).

Regarding claims 1, Walter discloses a similar apparatus comprising:

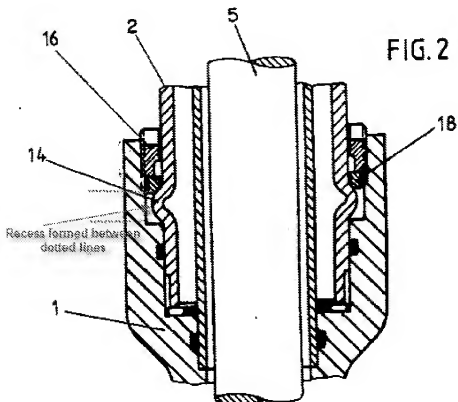
- a steering drive shaft (fig.2, 5; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation];
- a housing (fig.2, 2) accommodating the steering drive shaft and having a tube part (fig.2, 2; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and

- a bracket (fig.2, combination of 1, 16 and 18; form the bracket) having a fitting hole (fig.2, the hole through which the tube part and steering shaft penetrate axially. The bracket is arranged in a vehicle thus is configured to attach to the vehicle) into which said tube part is fitted in a co-axial direction of the tube part and which said tube part penetrates and [configured to attach said housing to a car body], and
- a bearing member fitted inside the tube part, and supporting the steering drive shaft (fig.2 labeled below; the bearing members are inside the tube part 2) and wherein



- said bracket has a recess (fig.2, see labeled figure below; the recess is the gap between the dotted lines.) in said fitting hole and

- said tube part has at least one escape preventing protrusion (fig.2, 14) bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.



Regarding claim 2,

- said recess is a circular groove (see fig.2, since protrusion 14 is an annular protrusion, the groove is circumferential and thus circular).

Regarding claim 3,

- Said tube part is metal (see fig.2, based on the cross-hatching, the tube part is metal).

Regarding claim 5,

- Said recess includes a circumferential groove (see fig.2, since protrusion 14 is an annular protrusion, the groove is circumferential and thus circular).

Regarding claim 7, Walter discloses a similar device comprising:

- a steering drive shaft (fig.2, 5; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation];
- a housing (fig.2, 2) accommodating the steering drive shaft and having a tube part (fig.2, 2; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and
- a bracket (fig.2, combination of 1, 16 and 18; form the bracket) having a fitting hole (fig.2, the hole through which the tube part and steering shaft penetrate axially.) into which said tube part is fitted in a co-axial direction of the tube part and attaching said housing to a car body (Since the bracket is part of a steering assembly which is used in a vehicle it has to attach to the car body even if its by virtue of other components. The claim does not read as directly attached to a car body so Walter still reads on this claim. Additionally, the word attaching is passive voice and does not positively recite the attachment but merely recites the process of attaching.), and wherein,
- said bracket has a recess (fig.2, see labeled figure below; the recess is the gap between the dotted lines.) in said fitting hole and

- said tube part has at least one escape preventing protrusion (fig.2, 14) bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.

Regarding claim 10, Walter discloses the at least one escape preventing protrusion bent into said recess [permanently prevents said bracket from escaping] (Walter's protrusion is capable of permanently preventing said from escaping assuming nothing breaks. The same condition applies to the present application).

Claims 1-3, 5, 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by MacDuff (USP 3908479).

Regarding claims 1, MacDuff discloses a similar apparatus comprising:

- a steering drive shaft (fig.1, 58; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation];
- a housing (fig.1, 16) accommodating the steering drive shaft and having a tube part (fig.1, 16; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and
- a bracket (fig.1, 20) having a fitting hole (fig.1, the hole through which the tube part and steering shaft penetrate axially.) into which said tube part is fitted in a co-axial direction of the tube part and which said tube part penetrates and [configured to attach said housing to a car body] (fig.1, attaches to car body or frame at 14, 26), and

- a bearing member fitted inside the tube part, and supporting the steering drive shaft (fig.1, 60, 70, are bearing elements since they support the shaft that moves within them) and wherein
- said bracket has a recess (fig.1, recess near where 20 is labeled) in said fitting hole and
- said tube part has at least one escape preventing protrusion (fig.1, the part that is bent into the recess at 20) bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.

Regarding claim 2,

- said recess is a circular groove (see fig.1, the recess is circumferential since it can be seen that the protrusion is circumferential when closely inspecting the cross section view of fig.1).

Regarding claim 3,

- Said tube part is metal (see fig.1, based on the cross-hatching, the tube part is metal).

Regarding claim 5,

- Said recess includes a circumferential groove (see fig.1, the recess is circumferential since it can be seen that the protrusion is circumferential when closely inspecting the cross section view of fig.1).

Regarding claim 7, MacDuff discloses a similar device comprising:

- a steering drive shaft (fig.1, 58; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation];
- a housing (fig.1, 16) accommodating the steering drive shaft and having a tube part (fig.1, 16; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and
- a bracket (fig.1, 20) having a fitting hole (fig.1, the hole through which the tube part and steering shaft penetrate axially.) into which said tube part is fitted in a co-axial direction of the tube part and attaching said housing to a car body (fig.1, the bracket attaches to the car body or frame at 14), and wherein,
- said bracket has a recess (fig.1, the recess near the label at 20 where the protrusion is bent in.) in said fitting hole and
- said tube part has at least one escape preventing protrusion (fig.1; the protrusion that is bent into the recess, it is not labeled but it is at the location where 20 is labeled) bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.

Regarding claim 8, MacDuff discloses the bracket is a single molded piece (see fig.1).

Regarding claim 9, MacDuff discloses the recess is pre-formed in the bracket prior to the bending of the at least one escape preventing protrusion (fig.1, the recess is entirely part of the structure of the bracket and is therefore preformed).

Regarding claim 10, MacDuff discloses the at least one escape preventing protrusion bent into said recess permanently prevents the bracket from escaping (fig.1, the bracket can not escape due to the circumferential protrusions as is readily evident from the figure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vincent et al. (USP 6176343) in view of Wood (USP 0779896).

Regarding claim 1 Vincent et al. discloses a steering drive shaft (fig.1, 15; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation]; a housing (fig.1, 12) accommodating the steering drive shaft and having a tube part (fig.1, 12; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and a bracket (fig.1, 22) having a fitting hole (fig.1, the hole through which the tube part and steering shaft penetrate axially.) into which said tube part is fitted in a co-axial direction of the tube part and which said tube part penetrates and [configured to attach said housing to a car body], and a bearing member fitted inside the tube part, and supporting the steering drive shaft (fig.1, 38 is within the radial dimension of the housing, furthermore the surface of 34

interacting with 12 forms a bearing member and lastly is very well known to have bearing members supporting the steering shafts).

Vicent et al. fails to disclose said bracket has a recess in said fitting hole and said tube part has at least one escape preventing protrusion bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.

Wood teaches the use of a fastening connection of a bracket (fig.1, B) which has a recess (fig.2, recess in the bracket into which b is fitted) in said fitting hole and a tube part has at least one escape preventing protrusion (fig.2, protrusion b; which is bent into the recess col.2, lines 74-77) bent into said recess and extending in a radial direction of the tube part, for the purpose of firmly locking the flange (bracket) to the pipe (housing) and preventing any longitudinal or rotary motion of one of the members independent of the other (col.2, lines 71-74)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the connection used by Vincent et al. to fasten the bracket to the housing to further include a recess in said fitting hole and said tube part has at least one escape preventing protrusion bent into said recess and extending in a radial direction of the tube part, as taught by Wood, for the purpose of firmly locking the flange (bracket) to the pipe (housing) and preventing any longitudinal or rotary motion of one of the members independent of the other (col.2, lines 71-74)

Regarding claim 3, the tube part disclosed in Vincent et al. is metal.

Regarding claim 6, Vincent et al. in view of Wood discloses the at least one escape preventing protrusion includes a plurality of escape preventing protrusions (see fig.2 and fig.5 in Wood).

Regarding claim 7, Vincent et al. discloses a steering drive shaft (fig.1, 15; it is capable of moving in an axial direction) [capable of moving in an axial direction in response to a steering operation]; a housing (fig.1, 12) accommodating the steering drive shaft and having a tube part (fig.1, 12; is in the form of a tube part) extending in a long axis direction of the steering drive shaft; and a bracket (fig.1, 22) having a fitting hole (fig.1, the hole through which the tube part and steering shaft penetrate axially.) into which said tube part is fitted in a co-axial direction of the tube part and attaching said housing to a car body (fig.1, 24; attaches to car body via a fastener not shown and is capable of attaching to the car body by any other means since it is installed in a vehicle).

Vicent et al. fails to disclose said bracket has a recess in said fitting hole and said tube part has at least one escape preventing protrusion bent into said recess and extending in a radial direction of the tube part, for preventing said bracket from escaping.

Wood teaches the use of a fastening connection of a bracket (fig.1, B) which has a recess (fig.2, recess in the bracket into which b is fitted) in said fitting hole and a tube part has at least one escape preventing protrusion (fig.2, protrusion b; which is bent into the recess col.2, lines 74-77) bent into said recess and extending in a radial direction of the tube part, for the purpose of firmly locking the flange (bracket) to the pipe (housing)

and preventing any longitudinal or rotary motion of one of the members independent of the other (col.2, lines 71-74)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the connection used by Vincent et al. to fasten the bracket to the housing to further include a recess in said fitting hole and said tube part has at least one escape preventing protrusion bent into said recess and extending in a radial direction of the tube part, as taught by Wood, for the purpose of firmly locking the flange (bracket) to the pipe (housing) and preventing any longitudinal or rotary motion of one of the members independent of the other (col.2, lines 71-74)

Regarding claim 8, Vincent et al. discloses the bracket is a single molded piece (fig.1, 22 is a single molded piece of metal).

Regarding claim 9, Vincent et al. in view of Wood discloses the recess is pre-formed in the bracket prior to the bending into of the at least one escape preventing protrusion (fig.4 of Wood, the bracket has the recesses pre-formed before installing).

Regarding claim 10, Vincent et al. in view of Wood discloses the at least one escape preventing protrusion bent into said recess permanently prevents said bracket from escaping (col.2, lines 71-74;).

Response to Arguments

Applicant's arguments with respect to claims 1-3, 5-10 have been considered but are found to be non-persuasive.

In response to applicant's argument that Wood is nonanalogous art, the prior art deals with the field of mechanical joints and connections (i.e. joining a pipe to a bracket) as would be understood by one of ordinary skill in the art and it is related to solving the applicant's problem of providing a specific type of bracket connection for the purpose of preventing the bracket from escaping the column tube. Since it both solves the same problem as the applicant's and is understood to be within the field of mechanical joints and connections the art would clearly be analogous. Regardless of whether the connection appears in a completely unrelated art (i.e. pipe flanges) one of ordinary skill in the art would clearly understand how to apply the type of connection to another type of art.

Applicant argues that Walter does not disclose "a bearing member fitted inside the tube part..." However, as shown in the above rejection, Walter clearly discloses a bearing member fitted inside the tube part to support the steering drive shaft.

Applicant argues that Walter requires a locking nut and a clamping ring to form the recess. However, it is clear that Walter reads on the recess as currently claimed and broadly interpreted. Without further defining the recess, Walter still anticipates the claim language.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS DIAZ whose telephone number is (571)270-5461. The examiner can normally be reached on Monday-Friday 8:30am to 5:00pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Diaz/
Examiner, Art Unit 3656

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3656